Organosilane G301

**** SECTION 1 - **IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING****
SDS Name: **Organosilane G301**
Chemical Name: 3-Glycidoxypropyltrimethoxysilane, 98%
Synonym(s): [3-(2,3-epoxypropoxy)propyl]trimethoxysilane
IUPAC Name: trimethoxy[3-(oxiran-2-ylmethoxy)propyl]silane
Company Identification: Dalian Onichem Co., Ltd.
No. 2 Gaoxin Street, Qixianling, Dalian 116023, P.R. China
Tel: 86-411-84794022, Fax: 86-411-84794077
For emergencies, call CHEMTREC 1-800-424-9300 or 1-202-483-7616

**** SECTION 2 - **HAZARDS IDENTIFICATION** ****
EU-GHS Classifications
Classifications below according to Regulation (EU) No 1272/2008 on classification, labelling and packaging of Substances and Mixtures (CLP).
Serious eye damage/eye irritation Category 1 H318
GHS-Labelling:
Globally Harmonized System of Classification and Labelling (GHS)
Symbol(s):

Hazard Pictogram: GHS05
Signal Word: Danger

Hazard Statement:	H318	Causes serious eye damage.
Precautionary Statement:	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P310	Immediately call a Poison Center or doctor/physician.
Other Hazards	Not a PBT, vPvB substance as per the criteria of the REACH Ordinance.	

**** SECTION 3 - **COMPOSITION, INFORMATION ON INGREDIENTS** ****

Ingredient (Chemical Name)	CAS#	EC#	Symbol(s)	R-phrase(s)	Hazard statements
3-Glycidoxypropyltrimethoxysilane, 98% min.	2530-83-8	219-784-2	Xi	R41	H318

**** SECTION 4 - **FIRST AID MEASURES** ****
General information: Take persons to a safe place. Observe self-protection for first aid. Before seeking medical attention remove contaminated clothing and shoes. Take a copy of the Safety Data Sheet when going for medical treatment.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, continue rinsing process with eye rinsing solution. Protect unaffected eye. Immediate further treatment in ophthalmic hospital. Continue rinsing eye until arrival at ophthalmic hospital.
Skin: Wash skin with soap and water immediately. Wash contaminated clothing before reuse. Consult a doctor in the event of persistent skin irritation.

Inhalation: Remove to fresh air at once. If respiratory problems, artificial respiration. Consult a physician immediately.
Ingestion: If conscious, drink plenty of water. Do not induce vomiting. Consult a physician immediately.
Indication of any immediate medical attention and special treatment needed:
Product may hydrolyse upon contact with body fluids in the gastrointestinal tract to produce additional methanol; therefore, consider the signs/symptoms of methanol poisoning and also observe the known latency period of several days

**** SECTION 5 - **FIRE FIGHTING MEASURES** ****
General Information: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan.
Suitable extinguishing media: Use Alcohol-resistant foam, dry chemical, or carbon dioxide.
Further information: Do not direct a solid stream of water or foam into hot, burning pools: this may cause frothing and increase fire intensity. Cool closed containers exposed to fire with water spray.
Unusual Fire and Explosion Hazards: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
Flash Point: 110℃(230°F).
Auto-ignition temperature: 400℃(752°F).
Explosion Limits, Lower: 0.7%(V) (200℃) Upper: >13.6%(V) (200℃)

HMIS Classification		**NFPA** Rating	
Health	2	Health	1
Flammability	1	Fire	1
Physical hazard	1	Reactivity	1

Advice for fire firefighters: In the case of fire, wear respiratory protective equipment independent of surrounding air and chemical protective suit. Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations

**** SECTION 6 - **ACCIDENTAL RELEASE MEASURES** ****
General Information: Use proper personal protective equipment as indicated in Section 8. Keep out unprotected persons, ensure adequate ventilation.
Spills/Leaks: Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container, to be disposed of in compliance with existing regulations.
Environmental precautions: Do not flush into surface water, sanitary sewer system

**** SECTION 7 - **HANDLING AND STORAGE** ****
Handling: Observe the rules usually applicable when handling chemicals. Provide good ventilation or extraction. Avoid inhalation of vapors and spray mists. Keep away from sources of ignition – No smoking. All equipment used when handling the product must be grounded.
Storage: Keep containers tightly closed in a cool, dry, well-ventilated place, protect from moisture

**** SECTION 8 - **EXPOSURE CONTROLS, PERSONAL PROTECTION** ****
Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Personal Protective Equipment (PPE)
Respiratory protection: In case of dusts/vapors/aerosols being formed or if the limit values like TLV are exceed: use respiratory equipment with suitable filter(filter type ABEK) or wear a self contained respiratory apparatus. Use only respiratory protection equipment with CE-symbol including four digit test number. The filter class for the respirator must be suitable for the maximum expected contaminant concentration(gas/vapor/aerosol/particulates)that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Note time limit for wearing respiratory protective equipment.

Eyes: Wear safety glasses and chemical goggles if splashing is possible.
Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Hygiene measures: When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Remove contaminated or saturated clothing. Wash contaminated clothing before re-use.
Protective measures: Handle in accordance with good industrial hygiene and safety practices. It should be defined in the work place in the form of a risk analysis according to directive 89/686/EEC and amendments.
If workplace exposure limits are exceeded and/or larger amounts are released(leakage, spilling, dust) the indicated respiratory protection should be used.
If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.
Do not breathe in vapors or aerosols.
Avoid contact with skin and eyes

**** SECTION 9 - **PHYSICAL AND CHEMICAL PROPERTIES** ****
Appearance: Transparent colorless to light yellowish liquid.
Odor: Ester-like.
pH: Not determined.
Vapor Pressure: < 0.1 hPa @ 20 ℃
Vapor Density (air=1): >1
Evaporation Rate: <1
Viscosity:2.9 mPa.s @ 25℃
BP/BP range: 290 ℃
Freezing/Melting Point: <-70 ℃
Decomposition Temperature: N/A.
Solubility in water: Reacts slowly.
Specific Gravity/Density: 1.069 g/cm3 @ 25 ℃
Molecular Formula: $C_9H_{20}O_5Si$
Molecular Weight: 236.34

**** SECTION 10 - **STABILITY AND REACTIVITY** ****
Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Avoid contact with ignition sources.
Incompatibilities with Other Materials: Reacts with water or moisture to form: Methanol.
Hazardous Decomposition Products: Carbon oxides, oxides of silicon – under the fire condition.
Hazardous Polymerization: The epoxysilane esters are not monomers in the usual sense, but polymeric materials may be produced by polymerization of the silyl ester group in the presence of controlled amounts of water and alkali or acid catalyst at ambient temperatures. At slightly higher temperature(ca. 50℃)， polyglycols or polyglycol ethers are produced via the epoxy functional group under the same conditions of water concentration and alkali or acid catalyst. In as much as both of these reactions are exothermic and may occur simultaneously, the heat evolved may be cumulative and greatly accelerate the rate of reactions. It is imperative, therefore, that unintentional contamination of the epoxysilane esters with water be avoided, and that intentional hydrolysis be properly controlled to avoid hazardous consequences

**** SECTION 11 - **TOXICOLOGICAL INFORMATION** ****
Acute oral toxicity: LD50: Rat, 8,025 mg/kg
Acute inhalation toxicity: LC50: Rat, ＞5.3mg/l/Aerosol 4h
Acute dermal toxicity: LD50: Rabbit, 4,250 mg/kg
Skin irritation: Rabbit: not irritating.
Eye irritation: Rabbit: irritating.
Sensitization: Buehler Test guinea pig: no sensitizing effects.
Repeated dose toxicity: Oral Rat, 28days, NOAEL: 500 mg/kg.

Assessment of STOT single: Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Assessment of STOT repeat exposure: Assessment The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Risk of aspiration toxicity: No Aspiration toxicity classification.
Gentoxicity in vitro: positive and negative.
Gentoxicity in vivo: positive and negative.
Carcinogenicity: Not listed by ACGIH, IARC, NIOSH, NTP or OSHA.
Toxicity to reproduction: Animal model trials have produced no evidence of fertility damage

**** SECTION 12 - **ECOLOGICAL INFORMATION** ****
Elimination Information (persistence and degradability)
Biodegradation: Value - 37%. Method - EC 79/831
Physico-chemical removability: Half-life period: 6.5hrs Method:OECD Test Guideline 111 Hydrolysis,abiotic decomposition.
Behaviour in environmental compartments
Bioaccumulation: not bioaccumulative. Mobility: Adsorption on the floor: low.
Ecotoxicity effects:

Toxicity species	Result	Species	Duration of exposure	Method
Fish toxicity	LC50: 55mg/l	Cyprinus carpio	96 h	EC 92/69
Daphnia toxicity	EC50: 324mg/l	Daphnia magna	48 h	US-EPA
Algae toxicity	EC50: 119mg/l	Scenedesmus subspicatus	7 d	US-EPA
Bacteria toxicity	＞100mg/l	Activated sludge	3 h	OECD TG 209-

Further ecological information
Do not discharge product unmonitored into the environment.
Results of PBT assessment: Not a PBT, vPvB substance as per the criteria of the REACH Ordinance

**** SECTION 13 - **DISPOSAL CONSIDERATIONS** ****
Dispose of in a manner consistent with federal, state, and local regulations.
Do not reuse empty containers and dispose of in accordance with the regulation issued by the appropriate local authorities. If there is product residue in the emptied container, follow directions for handling on the container's label.
Incorrect disposal or reuse of this container is illegal and can be dangerous.
No waste key number as per the European Waste Typed List can be assigned to this product, since such classification is based on (as yet undetermined) use to which the product is put by the consumer.
The waste key number must be determined as per the European Waste Types List(EU Waste Types List 2000/532/EC) in cooperation with the disposal firm, producing firm or authority

**** SECTION 14 - **TRANSPORT INFORMATION** ****
This product is not regulated as dangerous goods by DOT, IMDG, ADR/RID, IATA/ICAO

**** SECTION 15 - **REGULATORY INFORMATION** ****
European/International Regulations
European Labeling in Accordance with EC Directives
Statutory basis/list: According to Directive 67/548/EEC or 1999/45/EC

Hazard Symbols:	Xi	Irritant.
Risk Phrases:	R41	Risk of serious damage to eyes.
Safety Phrases:	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection

Other international regulations:
Listed on or in accordance with the following inventories
AICS – Listed/registered
EINECS - Listed/registered
ENCS - Listed/registered
IECSC - Listed/registered
KECL - Listed/registered
DSL - Listed/registered
PICCS - Listed/registered
TSCA - Listed/registered

**** SECTION 16 - **ADDITIONAL INFORMATION** ****
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if we have been advised of the possibility of such damages